



# USEPA Proposed Plan Reilly Tar & Chemical Corporation Superfund Site

Dover, Ohio

January 1997

## INTRODUCTION

### THIS FACT SHEET COVERS:

- ☆ Site background
- ☆ USEPA's recommended cleanup method for the Reilly Tar Superfund site

### PUBLIC COMMENT PERIOD

USEPA will accept written comments on its recommended change to the cleanup method for contaminated soil during a 30-day public comment period from:

January 15 until  
February 15, 1997

### PUBLIC MEETING

USEPA will hold a public meeting in Dover, Ohio to explain and answer questions about the recommended cleanup plan cleanup method for the site. Oral and written comments will be accepted at the meeting on January 22, 1997.

Date: January 22, 1997  
Time: 7:00 pm  
Place:  
Comfort Inn  
2024 State Rt 39 NW  
Dover, Ohio 44622

The United States Environmental Protection Agency (USEPA) and the Ohio Environmental Protection Agency (OEPA) are proposing a cleanup plan for the Reilly Tar & Chemical Corporation Superfund site (RTCC) in Dover, Ohio. This Proposed Plan presents remedy alternatives for contaminated soils, sediments, surficial coal tar, perched groundwater and shallow groundwater at the RTCC site.

Section 117 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires publication of a notice of and brief analysis of a Proposed Plan for site remediation, including modifications of those decisions. The Plan also must be made available to the public. This Proposed Plan provides background on the site, describes the alternatives being considered to control contaminated soils, sediments and groundwater at the site, presents the rationale for identification of the preferred alternative, and outlines the public's role in helping USEPA and OEPA make a final decision on the remedy.

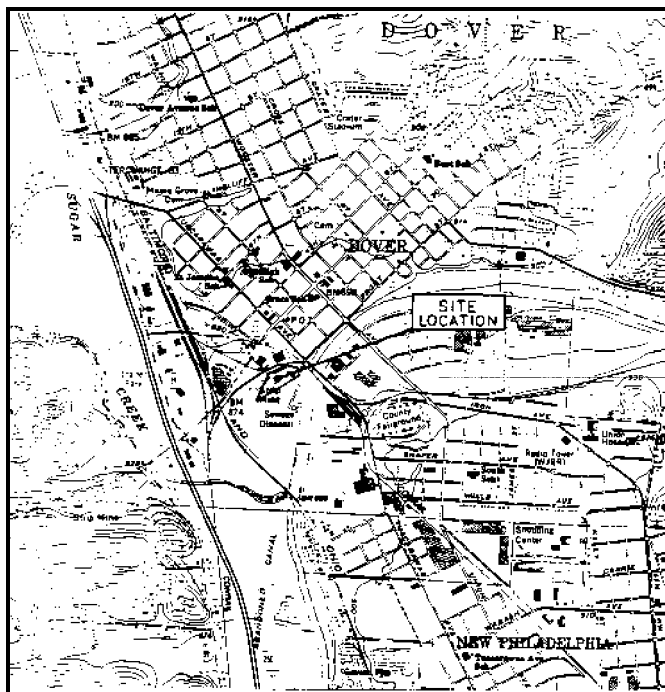


Figure 1  
RTCC Site Location  
Dover, Ohio

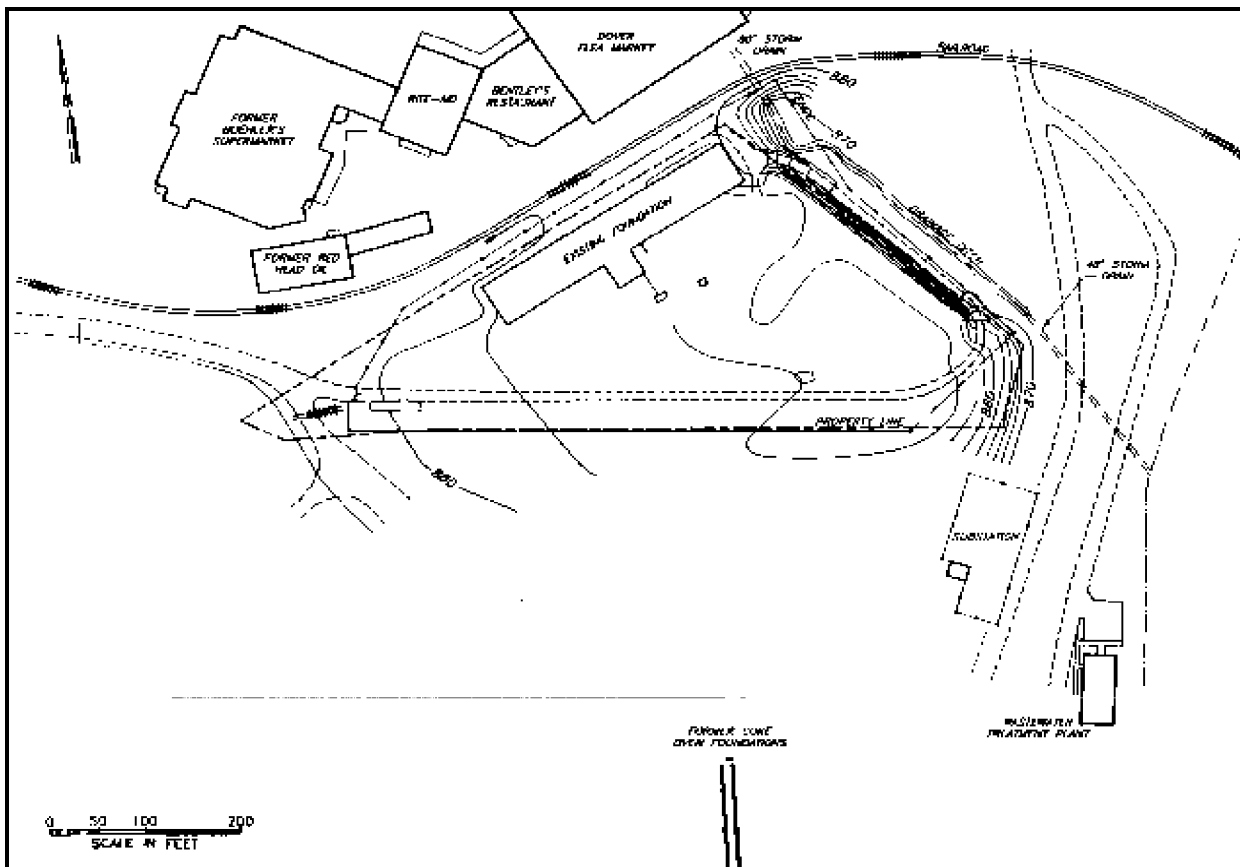


Figure 2  
Site Map and  
Site Plot  
Plan

## BACKGROUND

The RTCC site consists of 3.63 acres located on Third Street on the southwest edge of the City of Dover, Tuscarawas County, Ohio (Figure 1). The RTCC site is bordered on the northeast by a drainage ditch directing storm water runoff from the City of Dover into the Tuscarawas River. Current land use adjacent to the site is mainly commercial and residential north of the Site toward the Dover downtown area, and industrial to the west and southwest. Public power and sewage facilities are immediately east of the Site, and an open and undeveloped industrial area south of the Site is currently used for fill and borrow disposal.

The Site has an extensive industrial history which began in the mid-1800s. The development of the Site includes part of the Ohio Canal, the local pig iron blast furnace industry, a coking plant and foundry, and a coal tar refinery. Coal tar refining operations were conducted on the RTCC Site from approximately 1917 through 1956. During that time, coal tar wastes accumulated on the ground from spillage and other site activities.

The refinery was built on top of 10 to 20 feet of slag deposited there earlier by blast furnace operations. A large area south of the refinery was also covered with slag, which was mined during the 1940's and 1950's.

This mined area, and the former Ohio Canal were filled with municipal wastes and trash. North of the site, fill consists of sand, gravel, brick and concrete rubble. Four building foundations from former operations remain on-site. The largest foundation is located near the northern property line, eight feet below ground surface, and is approximately 300 feet long and 50 feet wide.

Ground water underlying the site is present in three water bearing units: perched zone, sand and gravel, and bedrock. The perched zone occurs above a layer of clay present approximately 15-18 feet beneath the site. The saturated thickness is from ½-7 feet. Perched zone groundwater is not utilized for water production or drinking. The sand and gravel aquifer underlies the clay layer and has a saturated thickness of greater than 290 feet. Ground water flow near the site is to the southeast. This aquifer is widely used for municipal water supplies for Dover and New Philadelphia and for numerous production wells. In most areas, this aquifer is connected to the Tuscarawas River. The bedrock aquifers typically used for domestic and agricultural purposes.

There are no surface water bodies on the Site except for standing water that occasionally lies within the building foundations and open excavations. Surface water bodies adjacent to the site include a storm water drainage ditch, Sugar Creek, and the Tuscarawas River. The

Tuscarawas River is located approximately 210 feet east of the site, is approximately 150 feet wide and flows north to south. The river is dammed at several locations to maintain constant pool elevation. A fixed head dam is located near the site and immediately south of the City of Dover waste water treatment plant.

In June, 1981, RTCC submitted a notification of Hazardous Waste Site form to EPA, in which "organic" and "creosote" contamination were identified as primary wastes at the site. In March, 1985, five groundwater monitoring wells were installed on site. Well samples revealed the presence of tar, polycyclic aromatic hydrocarbons (PAHs), chloroform, 1,1,1-Trichloroethane, and carbon tetrachloride. Subsequently, the site was scored at 31.38 using the Hazardous Ranking System, which is used to evaluate potential risk to human health.

In July 1988, seven soil samples were collected and analyzed for PAH compounds by USEPA. Results showed a presence of PAHs common to coal tar at elevated levels.

In early October 1988, under a Consent Order executed by USEPA, Reilly Industries and Ronald and Lois Quillin erected a fence around the site. Pursuant to a Unilateral Administrative Order (UAO) issued by USEPA to Reilly Industries and Ronald and Lois Quillin on March 30, 1989, a Remedial Investigation (RI) was undertaken. The results of this investigation were presented in the Remedial Investigation Report for the RTCC, Dover, Ohio dated June 1993 and may be found in the site repository, in the Dover and Tuscarawas County Public libraries, and in the administrative record.

In June and July, 1990, under USEPA oversight, Reilly conducted an expedited response action (ERA) to remove surficial coal tar and asphalt materials. Ninety truck loads of surficial materials were hauled off site in 40 days. The total quantity of materials removed was 1,442 tons.

## SUMMARY OF SITE RISKS

Based on the results of the RI, it was concluded that the site is contaminated with coal tar constituents, which constitute a threat to human health and the environment. The ERA performed by Reilly Industries removed the majority of surficial coal tar and asphaltic materials from the Site, however, residual coal tar is still present at the surface near the center of the Site, along the west bank of the drainage ditch, and at the outfall of the Tuscarawas River.

Coal tar-coated fill is present directly above the clay layer. The thickness of this layer ranges from less than 1 inch, to 4 feet. Coal tar is present beneath the clay in two locations on-site and one location off-site. Coal tar is also present in the sediments of the south portion of the storm water drainage ditch. Droplets of coal tar are present in

the sediments of the Tuscarawas River adjacent to the storm water drainage ditch outlet. Sediments collected upriver from the drainage ditch outlet showed minor concentrations of coal tar contaminants.

Surface soil samples showed visual evidence of coal tar contamination near the center of the site and west of the drainage ditch. These samples contain elevated levels of benzene, toluene, and xylene (BTEX) and PAHs.

Ground water is considered the primary mechanism for contaminant migration off-site. The drainage ditch also appears to be acting as a mechanism for coal tar migration off-site. The perched aquifer beneath the site and north of the site contain free phase coal tar, and elevated levels of PAH and BTEX compounds. The shallow portion of the regional aquifer contains PAHs and BTEX on-site and up gradient of the site in excess of MCLs. The shallow regional aquifer discharges to the Tuscarawas river, and is uncontaminated near the Tuscarawas River. PAH concentrations in the parts per trillion range were found at mid depth and deep portions of the regional aquifer, well beneath levels of concern.

A base-line human health and ecological risk assessment was conducted as part of the RI. The human health risk assessment evaluated potential adverse health effects associated with the Reilly site in two distinct ways: by evaluating (1) potential chronic noncarcinogenic health effects; and (2) potential carcinogenic risk. Both current and potential future use exposure scenarios were evaluated. Twelve complete exposure pathways by which human populations may be exposed to chemicals of concern were evaluated. Six complete exposure pathways were identified under potential future use conditions. Examples of pathways are, ingestion of ground water, inhalation of VOCs while showering, and dermal adsorption of the contaminants from contact with soil, sediment and surface water.

Carcinogenic risks are present on-site above the threshold risk range of  $10E-6$  -  $10E-4$ , or one in a million to one in ten thousand excess cancer cases due to exposure to site contamination. The highest potential carcinogenic risk, associated with the future on-site residential scenario, is  $1.3 E-3$ . The principal threat is from dermal and ingestion exposure to soils and sediments contaminated with Benzo(a)pyrene, a carcinogenic PAH constituent in coal tar. The carcinogenic risk to a near off-site resident with exposure to shallow regional groundwater is  $6.56E-4$ . The non-carcinogenic hazardous index associated with this scenario is 2.87, exceeding the threshold value of 1.0.

The carcinogenic risk to current and future on-site workers is  $3.7E-4$ . Again, the principal threat is from dermal and ingestion exposure to soils and sediments contaminated with Benzo(a)pyrene. Non-carcinogenic risks for current and future on-site workers are well under the threshold hazardous index value of 1.0, indicating that

no potential non-carcinogenic health effects are expected to occur.

The carcinogenic risk to current off-site residents living across the Tuscarawas River is below 1E-6. Non-carcinogenic risks for current and future off-site residents living east of the Tuscarawas River are well under the threshold hazardous index value of 1.0, indicating that no potential non-carcinogenic health effects are expected to occur.

Results of the ecological risk assessment indicate that terrestrial species are unlikely to experience adverse health effects due to exposure to site contamination, however, the presence of coal tar droplets at the outfall of the Tuscarawas River shows that aquatic species may be affected by contaminants. The extent of the contaminated river sediments and the potential to effect aquatic species will be evaluated further during the remedial response to this site.

DESCRIPTION OF SITE-WIDE REMEDY  
ALTERNATIVES EVALUATED

Several site-wide alternative cleanup methods were evaluated in the Feasibility Study and in addenda to the Feasibility Study, which may be obtained in the site repository and in the administrative record:

Alternative 1 - No Action

This alternative is presented in all proposed plans to serve as the baseline by which other alternatives are compared. Under this alternative, no response action is taken, and site risks to human health and the environment remain unmitigated.

Capital:	\$	0
O&M:	\$	0
Present Worth	\$	0

Alternative 2 - Institutional controls, excavation and thermal treatment of surface water drainage ditch and river sediments, surface soils and impacted perched zone material contaminated with greater than 100 ppm B(a)P-TE , and off-site disposal of solidified tarry materials; excavation and on-site disposal of surface water drainage ditch sediments, surface soils and impacted perched zone material contaminated with less than 100 ppm B(a)P-TE, and greater than 5 ppm B(a)P-TE. Ohio Solid Waste cap over on-site disposed materials. Soil cover over remainder of the site. Natural attenuation and long-term monitoring of shallow ground water. Sampling and analysis of sediments in the river.

Under this alternative, the site will continue to be zoned for industrial use only, a deed restriction will be placed on-site banning all use of groundwater, and limiting disturbance of the land; impacted surface water drainage

ditch sediments and contaminated surficial soils above the 100 ppm contamination level for B(a)P - approximately 2480 cubic yards will be excavated and thermally treated off-site; impacted surface water drainage ditch sediments and contaminated surficial soils between 5 ppm and 100 ppm B(a)P - approximately 5500 cubic yards, will be placed on-site within the building foundation and capped with an Ohio RCRA Subtitle D Solid Waste Cap; tarry materials will be solidified and disposed of off-site; the remainder of the site will be covered with soil and vegetated. Sediments in the river will be sampled and analyzed to further determine possible impacts on the river ecosystem.

Capital Cost:	\$1,257,000
30 yrs. Operation & Maintenance	\$ 965,000
Total Present Worth:	\$2,220,000

Alternative 3 - Institutional controls, excavation and thermal treatment of surface water drainage ditch sediments, surface soils and impacted perched zone material contaminated with greater than 100 ppm B(a)P-TE , and off-site disposal of solidified tarry materials; excavation and on-site disposal of surface water drainage ditch and river sediments, surface soils and impacted perched zone material contaminated with less than 100 ppm B(a)P-TE, and greater than 5 ppm B(a)P-TE. Ohio RCRA Subtitle D Solid Waste Cap over on-site disposed materials. Soil cover over remainder of the site; hydraulic control and collection of perched ground water and natural attenuation and long-term monitoring of shallow ground water. Sampling and analysis of sediments in the river.

Under this alternative, all action items in alternative 2 will be implemented. In addition, a french drain will be placed in the perched aquifer to maintain a hydraulic barrier to perched tarry materials and groundwater migration off-site.

Capital:	\$1,379,100
O&M:	\$1,431,200
Present Worth	\$2,810,300

Alternative 4 - Institutional controls, excavation and off-site treatment of drainage ditch sediments, surface soils and impacted perched zone material from the collection trench installation contaminated with greater than 5 ppm B(a)P-TE; solidification and off-site disposal of tarry materials; a soil cover over the site; hydraulic control and collection of perched ground water and natural attenuation and long-term monitoring of shallow ground water. Sampling and analysis of sediments in the river.

Under this alternative, all excavated soils and sediments, approximately 8000 cubic yards, will be treated off-site in a cement kiln, eliminating the need for a solid waste cap. Tarry materials will be solidified prior to disposal. Other

action items will be implemented as above.

Capital:	\$2,238,200
O&M:	\$1,431,200
Present Worth	\$3,669,400

#### EVALUATION OF SITE-WIDE ALTERNATIVES

Nine evaluation criteria have been developed by USEPA to address the statutory requirements and technical, cost and institutional considerations for appropriate remedial actions at Superfund Sites. These criteria are described below. The evaluation table on the following page compares the alternatives to these criteria.

Overall Protection of Human Health and the Environment addresses whether or not the remedy provides adequate protection and describes how risks are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether or not the remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes and/or provide grounds for invoking a waiver.

Long-term Effectiveness and Permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

Reduction of Toxicity, Mobility, or Volume Through Treatment is the anticipated performance of the treatment technologies a remedy may employ.

Short-term Effectiveness involves the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

Implementability is the technical and administrative feasibility of a remedy, including the availability of goods and services needed to implement the chosen solution. Cost includes capital and operation and maintenance costs.

Support Agency Acceptance indicates whether, based on its review of the Remedial Investigation / Feasibility Study (RI/FS) and Proposed Plan, the support agency concurs, opposes, or has no comment on the preferred alternative.

Community Acceptance addresses the public's comments on and concerns about the Proposed Plan and the FS Report. The specific responses to public comments will be addressed in the Responsiveness

Summary attached to the Amended Record of Decision.

#### USEPA RECOMMENDATION

USEPA recommends Alternative 3: Institutional controls, excavation and off-site thermal treatment of drainage ditch and river sediments, surface soils and impacted perched zone material from the collection trench installation contaminated with greater than 100 ppm B(a)P-TE, and off-site disposal of solidified tarry materials; excavation and on-site disposal of surface water drainage ditch and river sediments, surface soils and impacted perched zone material contaminated with less than 100 ppm B(a)P-TE, and greater than 5 ppm B(a)P-TE; an Ohio Subtitle D Solid Waste Cover over on-site disposed materials; a soil cover over the remainder of the site; hydraulic control and collection of perched ground water and natural attenuation and long-term monitoring of shallow ground water. Sampling and analysis of sediments in the river. The efficiency of this remedy will be evaluated through the five year review process.

Alternative 1, the no action alternative, is not protective of human health or the environment, because risks posed by the site remain unabated. Alternative 2 is also not protective of the environment, because the perched aquifer, which is heavily contaminated with coal tar, is not contained, and contaminants within the perched zone may migrate off-site.

Alternatives 3 and 4 are both protective of human health and the environment, and meet ARARS. Both Alternatives 3 and 4 employ treatment of principle threats at the site, however, Alternative 3 is more cost effective. In Alternative 3, lightly contaminated soils and sediments remain on-site in an engineered vault and covered by an Ohio RCRA Subtitle D Solid Waste cap, rather than being treated off-site in a cement kiln, specified in Alternative 4.

As this site will be limited to commercial/industrial use, and well development will be prohibited, USEPA and OEPA consider it is more cost effective to keep lightly contaminated soils contained on-site, rather than requiring a far more costly off-site treatment. Also, because Alternative 3 includes a hydraulic control through the main recharge area of the perched zone aquifer, all possible contaminant pathways of concern are effectively mitigated. Therefore, Alternative 3 is recommended.

Evaluation Criteria	Alt #1	Alt #2	Alt #3	Alt #4
Overall Protection of Human Health and the Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Compliance with ARARs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Long-term Effectiveness and Permanence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reduction of Toxicity, Mobility, or Volume through Treatment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Short-term Effectiveness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Implementability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cost (Net present worth of capital + O&M), Thousands of Dollars	\$0	\$2,220	\$2,810	\$3,670
Support Agency Acceptance	The Ohio Environmental Protection agency has reviewed the Feasibility Study and supports alternative 3 as the recommended cleanup method pending review of public comments.			
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.			

☒ Fully Meets Criteria    
 ☒ Partially Meets Criteria    
 ☐ Does Not Meet Criteria

#### YOUR OPINION COUNTS!

Public input on USEPA's and OEPA's recommended cleanup method is important to the cleanup remedy selection process. Based on new information obtained through public comment, USEPA may modify its recommended alternative or select another alternative presented in this fact sheet. The public is encouraged to review and comment on USEPA's recommended cleanup method and the other alternatives that were evaluated. USEPA will respond to comments in a document called a Responsiveness Summary, which will be attached to the ROD.

## GLOSSARY

**Aquifer** - The underground layer of rock, sand, or gravel capable of storing water within cracks and pores, or between grains.

**Cleanup** - A general term used to describe any and all actions taken to deal with a release or threatened release of hazardous substances that might affect human health or the environment.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** - More commonly known as Superfund, a Federal law passed in 1980 and revised in 1986 by the Superfund Amendments and Reauthorization Act (SARA). CERCLA created a special tax that goes into a trust fund, commonly known as the "Superfund," to investigate and clean up abandoned or uncontrolled hazardous waste sites.

**Maximum Contaminant Level (MCL)** - Federal drinking water standard that sets the maximum level of a contaminant allowed in drinking water.

**Record of Decision (ROD)** - A document outlining the selected remedy for a Superfund site. The ROD includes the Responsiveness Summary, which addresses concerns presented to USEPA during the public comment period. The ROD is signed by the Region 5 Division Director for the Superfund Division.

**Volatile Organic Compounds (VOCs)** - A group of organic compounds often used as solvents that has a tendency to evaporate when exposed to air. Since ground water does not usually come into contact with air, VOCs are not easily released and can be present for many years in ground water used for drinking water. When present in drinking water, VOCs may pose a potential threat to human health.

**BTEX Compounds** - benzene, toluene and xylene. A group of aromatic organic compounds associated with petroleum products. These compounds move quickly in ground water, and are susceptible to natural bio-degradation processes.

**Polynuclear Aromatic Hydrocarbons (PAHs)** - A group of semi-volatile organic 4,5, and 6 ring aromatic compounds which occur most often as products of incomplete combustion. These compounds are slow to migrate in groundwater and resist natural bio-degradation processes.

**B(a)P** - Benzo(a) Pyrene. A Carcinogenic PAH, as defined above.

**Total Present Worth** - The present day equivalent cost of current and future expenditures for a remedial response action.

**ppm, ppb, ppt** - parts per million, billion and trillion. These are units of concentration on a weight per weight basis, in soil, sediments, water or air.

Use This Space to Write Your Comments

Your input on USEPA's recommended alternative cleanup method for contamination at the RTCC Site is important to us. Public comments assist USEPA in selecting its final remedy.

You may use the space below to write your comments then fold and mail or fax your comments to (312) 353-1155. All comments must be postmarked by . If you have questions please contact Virginia Narsett, USEPA Community Involvement Coordinator, at (312) 353- or toll free at 800-621-8431. Comments may also be sent via electronic mail to the following address:  
Virginia.Narsett@epamail.epa.gov

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Zip \_\_\_\_\_

Virginia Narsett  
Community Involvement Coordinator  
Office of Public Affairs  
USEPA (P-19J)  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

#### ADDITIONAL INFORMATION

To learn more about the RTCC Site or the superfund process, please review the information repository and Administrative Record maintained for this Site located at:

Dover Public Library  
525 N. Walnut  
Dover, Ohio 44622

Tuscarawas County Public Library  
121 Fair Avenue N.W.  
New Philadelphia 44663

U.S. EPA  
77 W. Jackson Blvd.  
Chicago, IL 60604

For additional information about the RTCC Site, please contact:

#### USEPA:

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#### OEPA:

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